

REMARKS

Entry of the foregoing Preliminary Amendment prior to examination is respectfully requested. By this Preliminary Amendment, claims 5 – 8, 10, 15 – 18 and 20 have been amended to eliminate improper multiple dependencies from the claims and thus place the application in better form for initial review and consideration by the Examiner. No new matter has been added. If the Examiner has any suggestions for placing this application in even better form, the Examiner is invited to telephone the undersigned at the number listed below.

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Respectfully submitted,

By 

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effective in preventing senility. Here, “senility” refers to a condition in which intelligence once acquired is continuously lost, namely, dementia.

Further, the Noise-Vocoded Speech Sound is expected to activate the brain activity in regions subject to brain damage that is considered to cause senility. Therefore, other than reinforcement of aural function, one can expect prevention of occurrence of senility phenomena or relief of senility symptoms due to recovery of functions in damaged brain regions.

Next, a modification of the apparatus for preventing senility is described. For example, in case of a hearing-impaired person who has a low sensitivity for a certain frequency band, the respective bandpass filters can be provided with frequency characteristics that compensate such a characteristic of low sensitivity for that certain frequency band. When an audible volume range of a subject is limited, if listening in a small volume is difficult for the subject, and also in a large volume, presented speech is too distorted for the subject to aurally comprehend, non-linear multiplication characteristics can be provided to the multipliers 3a, 3b, 3c and 3d of the multiplication section 3 so as to correct the dynamic range of the presented speech as appropriate. Provision of characteristics to compensate hearing disability that is common to the aged people facilitates their language comprehension, and further activates brain activity.

As explained above, the band noise signals were produced by a noise source 5. However, they can also be produced by subjecting a speech signal to distortion and noise degradation. The input signal of the bandpass filter section 1 may be subjected to distortion; otherwise, the output signals of the bandpass filters 1a to 1d may be distorted for use.

In Fig. 1, the respective envelopes of the speech signals in four different frequency bands were detected and the amplitude of the corresponding band noise signals was modulated in accordance with the envelope signals; however, it is also possible to use only some of the envelope signals. As for the rate, with which the envelope signals change over time,